REMARKS

This Amendment is fully responsive to the non-final Office Action dated December 10, 2008, issued in connection with the above-identified application. Claims 14-26 are pending in the present application. With this Amendment, claims 14-26 have been amended. No new matter has been introduced by the amendments made to the claims. Favorable reconsideration is respectfully requested.

To facilitate the Examiner's reconsideration of the present application, the Applicants have amended the specification and abstract. The changes to the specification and abstract include minor editorial and clarifying changes. Replacement paragraphs and a replacement abstract are included, which show the changes made to the original specification and abstract. No new matter has been introduced by the changes made to the specification and abstract.

In the Office Action, the specification has been objected to based on minor informalities. Specifically, the Examiner alleges that the present title of the application is not clearly indicative of the invention as claimed. Additionally, the Examiner has suggested changing the title to "Matrix Display With Gamma-Correction Based On Gamma Characteristics Pairs And Different Input Transmittance Level." The Applicants have amended the title to be consistent with the suggestions made by the Examiner. Accordingly, withdrawal of the objection to the specification is respectfully requested.

In the Office Action, claims 14-26 have been objected to based on minor informalities. Specifically, the Examiner noted various symbols in the claims that were not defined. The Applicants have amended the claims to correct the minor informalities noted by the Examiner. Accordingly, withdrawal of the objection to claims 14-26 is respectfully requested.

In the Office Action, claims 14-26 have been rejected under 35 U.S.C. 112, second paragraph, for being indefinite. Specifically, the Examiner alleges that the claims are incomplete and omit central elements. For example, the Examiner alleges that the claims omit the definition of a distribution area ratio and fail to explain a ratio of what elements constitute the distribution area ratio.

Additionally, the Examiner alleges that claims 15, 17 and 20 recite that the limitation "the first distribution area ratio and the second area ratio are equal to the distribution area ratio," which is unclear as to what is being equated. The Applicants have amended the above claims to

clarify the limitations noted above by the Examiner. Accordingly, withdrawal of the rejection to claims 14-26 under 35 U.S.C. 112, second paragraph, is respectfully requested.

In Office Action, claims 14-16 and 23-26 have been rejected under 35 U.S.C. 102(b) as being anticipated by Sawabe (U.S. Publication No. 2003/0146893, hereafter "Sawabe").

The Applicants have amended independent claims 14 and 26 to help further distinguish the present invention from the cited prior art. For example, claim 14 (as amended) recites the following features:

"[a]matrix-type display apparatus which drives a display panel including a plurality of pixels disposed in matrix form and displays an image, comprising:

a converting portion adapted to gamma-convert an input video signal, using n (which is an integer of two or above) pairs of gamma–characteristics each made up of first and second gamma–characteristics different from each other; and

a selecting portion adapted to specify a transmittance to be used for display based on the input video signal, to select one pair of gamma–characteristics from among the n pairs of gamma–characteristics according to the specified transmittance to be used for display, and to select an output supplied to the display panel from among the 2n outputs which are gamma-corrected by said converting portion, so that a ratio between a first distribution area of pixels driven by the video signal gamma-corrected by use of the first gamma–characteristic of the selected pairs of gamma–characteristics and a second distribution area of pixels driven by the video signal gamma-corrected by use of the second gamma–characteristic of the selected pairs of gamma–characteristics is equal to a distribution area ratio specified in advance for the selected pairs of gamma–characteristics." (Emphasis added).

The features emphasized above in independent claim 14 are similarly recited in independent claim 26. Additionally, the features emphasized above are fully supported by the Applicants' disclosure (see e.g., pg. 21, line 2-pg. 22, line 11).

The present invention (as recited in independent claims 14 and 26) is distinguishable over the cited prior art in that a transmittance to be used for display and based on the input video signal is specified, and one pair of gamma-characteristics is selected from among the n pairs of gamma-characteristics according to the specified transmittance to be used for display.

The present invention provides the advantageous effect that the video signals gamma-corrected by use of the first and the second gamma-characteristics suitable for a transmittance to be used for display are selected to be a distribution area ratio suitable for the transmittance to be used for display. Additionally, the present invention provides good viewing angle characteristics at a wide-ranging transmittance. No such features are believed to be disclosed or suggested by the cited prior art.

In the Office Action, the Examiner relies on Sawabe for disclosing all the features recited in independent claims 14 and 26. However, the Applicants assert that Sawabe fails to disclose or suggest all the features now recited in independent claims 14 and 26, as amended

As disclosed in Sawabe, an object of the reference is to provide a liquid crystal display device which obtains a high contrast and an excellent gradation curve with a wide viewing angle so that a display quality level of a display screen can be improved. Additionally, another object of Sawabe is to provide a display screen with a narrow viewing angle to securely display information not desired to be shown to other people by the adjustment in the gradation curve's distortion with respect to the viewing angle on the display screen (see e.g., paragraph [0045]).

In other words, Sawabe provides a liquid display device with a wide viewing angle and a narrow viewing angle. Therefore, according to Sawabe, any of LUT 0 to LUT 4 is selected based on a viewing angle (see e.g., paragraph [0251]), and a contrast is changed (see paragraphs [0253] and [0254]). Specifically, as described in Sawabe, "any of five look-up tables (LUT 0 to LUT 4) is selected in accordance with the selection signal supplied from outside" (see paragraph [0250]).

Sawabe, however, does not disclose or suggest a transmittance to be used for display and based on the input video signal that is specified; and one pair of gamma-characteristics selected from among the n pairs of gamma-characteristics according to the specified transmittance to be used for display, as recited in independent claims 14 and 26 (as amended).

Further, the Examiner stated that, since any of LUT 0 to LUT 4 is selected based on a viewing angle (see paragraph [0251]), and a contrast is changed (see paragraphs [0253] and [0254]), and the contrast depends on the transmittance (see paragraph [0268]), Sawabe teaches selection of LUT based on transmittance. However, the Applicants respectfully disagree with

this conclusion. According to the LUT 0 to LUT 4 in Sawabe, white (gradation level 255) of data and black (gradation level 0) of data are set as shown in Table 4. By setting the LUTs, a contrast characteristic of white and black of LUT 0 to LUT 4 is changed so as to deteriorate as it goes down from the LUT 0 to LUT 4 (see paragraph [0253]).

In Sawabe, the width of the viewing angle in the liquid crystal display is defined by the width of the area where a contrast ratio of white to black is not less than a predetermined value (see paragraph [0253]). Therefore, the aforementioned setting makes the contrast characteristics of the LUT 0 to LUT 4 deteriorated as it goes from the LUT 0 to LUT4, and the viewing angle characteristics deteriorated as it goes from the LUT 0 to LUT 4. Therefore, a viewing angle becomes narrow. In other words, the LUT 0 realizes the widest viewing angle, and the viewing angle becomes narrower as it goes from the LUT 0 to LUT 4, wherein the LUT 4 makes the viewing angle narrowest.

Thus, Sawabe discloses a wide viewing angle and a narrow viewing angle by selecting any of five LUT 0 to LUT 4 of different viewing angles from outside, thereby realizing a wide viewing angle and a narrow viewing angle. Since the narrow viewing angle is used for displaying information not desired to be viewed by other people (see paragraph [0045]), it is selected by a user. Therefore, Sawabe again does not teach specifying transmittance to be used for display based on an input video signal and selecting any of the LUT 0 to LUT 4 in accordance with the specified transmittance to be used for display.

In the Office Action, the Examiner indicates that Sawabe discloses that "the first distribution area is the 2 bright pixels and 1 dark pixel belonging to divisional pixel A of the pixel formed at the 1st row and 1st column, and the second distribution area is the 2 dark pixels and 1 bright pixel belonging to divisional pixel B of the pixel formed at the 1st row and 1st column, and brightness and darkness are allocated based on luminance." However, according to Sawabe, brightness and darkness are allocated to all of LUT 0 to LUT4 by the aforementioned one pattern, and the ratio between the area of pixels to which brightness is allocated and the area of pixels to which darkness is allocated is 1:1 which is the only one pattern.

Thus, since the ratio is not a ratio predetermined for each of LUT 0 to LUT 4 (each of n pairs of gamma characteristics), it is clear that the ratio is not predetermined for the selected

gamma-characteristic pair. Therefore, Sawabe does not disclose or suggest "an output supplied to the display panel is selected from among the 2n outputs which are gamma-corrected by the converting portion, so that a ratio between a first distribution area of pixels driven by the video signal gamma-corrected by use of the first gamma-characteristic of the selected pairs of gamma-characteristics and a second distribution area of pixels driven by the video signal gamma-corrected by use of the second gamma-characteristic of the selected pairs of gamma-characteristics is equal to distribution area ratio specified in advance for the selected pairs of gamma-chracteristics," as recited in independent claims 14 and 26.

Based on the above discussion, independent claims 14 and 26 (as amended) are not anticipated or rendered obvious by Sawabe. Likewise, claims 15, 16 and 23-25 are not anticipated or rendered obvious by Sawabe at least by virtue of their dependencies from independent claim 14.

In the Office Action, claims 17 and 20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sawabe; and claims 18, 19, 21 and 22 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Sawabe in view of Lee (U.S. Publication No. 2004/0046725, hereafter "Lee").

Claims 17-22 depend from independent claim 1. As noted above, Sawabe fails to disclose or suggest all the features recited in independent claim 1. Additionally, Lee fails to overcome the deficiencies noted above in Sawabe. Accordingly, no combination of Sawabe and Lee would result in, or otherwise render obvious, claims 17-22 at least by virtue of their dependencies from independent claim 1.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner wthdraw the rejections presented in the outstanding Office Action, and pass the present application to issue.

Respectfully submitted,

Katsuyuki ARIMOTO et al.

Mark D. Pratt
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By: _____

Mark D. Pratt
Registration No. 45794
Attorney for Applicants

MDP/ats
Washington, D.C. 20005-1503
Telephone (202) 721-8200
Facsimile (202) 721-8250
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